AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. (currently amended) A diagnostic ultrasound system comprising:

a probe for measuring a subject using ultrasound by bringing said probe into contact with a subject in a first state;

a first image production means for producing a first image of said subject according to information sent from said probe;

an image display means for displaying said first image produced by said first image production means;

a second image production means for producing a second image of said subject according to information measured by bringing the probe into contact with said subject in a second state different from said first satestate in that pressure is applied to the subject;

a distortion operation means for calculating distortion information on a desired region-of-interest in said second image corresponding to the desired region-of-interest on said first image;

a display control means for controlling the display of the distortion information, which is calculated by said distortion operation means, on said image display means;

a means for setting at least two feature points asa reference information and the desired region-of-interest on said first image displayed by said image display means;

a variation operation means for calculating a macro displacement, which is a positional a change of a distance between said two feature points the reference information set on said first image into a counterpart visualized in said second

image, and for calculating a micro displacement, which is the deformation change of the region-of-interest in said first image into a counterpart visualized in ~~of said~~ first ~~image versus~~ said second image; and

a means for displaying ~~a~~ the relationship between ~~the change of the distance~~ said macro displacement and said micro displacement calculated by said variation operation means and the distortion information calculated by said distortion operation means.

2. – 3. (cancelled).

4. (currently amended) A diagnostic ultrasound system according to Claim 3, further comprising a region-of-interest setting means for setting a desired region-of-interest on said first image, wherein ~~a~~ the deformation change of the region-of-interest delineated in said first image into a counterpart visualized in said second image is calculated and displayed on said image display means.

5. (previously presented) A diagnostic ultrasound system according to Claim 1, wherein said reference information set by said setting means is the two feature points set on said first image at a vicinity point of said probe and at the deepest point from the vicinity of said probe.

6. (original) A diagnostic ultrasound system according to Claim 1, wherein said reference information inputted by said setting means is automatically set in a predetermined portion of said first image.

-3-

7. (original) A diagnostic ultrasound system according to Claim 1, wherein said display control means displays an image of said desired region-of-interest on said image display means in a different display form, that is, in a different color or shape.

8. (cancelled).

9. (original) A diagnostic ultrasound system according to Claim 1, further comprising a graph production means for producing a graph indicating the relationship between at least one of statistics including an instantaneous value of a displacement relative to a region in contact with said probe, a cumulative value of displacements, and an average of displacements, and at least one of statistics including a displacement relative to a region-of-interest, wherein

said display control means displays the graph, which is produced by said graph production means, on said image display means.

10. (original) A diagnostic ultrasound system according to Claim 1, further comprising a character string production means for producing a character string, which represents a numerical value of at least one of statistics including an instantaneous value of a displacement relative to region-of-interest in said subject, a cumulative value of displacements, and an average of displacements, wherein said display control means displays the character string, which is produced by said character string production means, on said image display means.

11. (currently amended) A method for displaying information on distortion of biological tissue in ultrasonic image, comprising:

-4-

a first image production step for measuring a subject using ultrasound by bring a probe into contact with a subject in a first state, and producing a first image of said subject according to the measurement information;

an image display step for displaying said first image produced at said first image production step;

a step for setting ~~at least two feature points as~~a reference information <u>and a desired region-of-interest</u> on said first image displayed at said image display step;

a second image production step for measuring a subject using ultrasound by bring said probe into contact with said subject in a second state different from said first ~~sate~~<u>state in that pressure is applied to the subject</u>, and producing a second image of said subject according to the measurement information;

a variation operation step for calculating a <u>macro displacement, which is a positional</u> change of ~~distance between said two feature points, which is set on said first image at said setting step, into a counterpart visualized in~~<u>the reference information set on said first image into a counterpart visualized in said second image and for calculating a micro displacement, which is the deformation change of the region-of-interest in said first image into a counterpart visualized in</u> said second image;

a step for seeking a relationship between the ~~variation~~<u>macro displacement and the micro displacement</u> calculated at said variation operation~~step and distortion information on a desired region-of-interest which is setting on said second image~~; and

a display control step for controlling the display of said relationship, which is ~~calculated at said distortion operation step sought at said step for seeking~~<u>sought at said step for seeking</u>, at said image display step.

12. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein: at said variation operation step, a locus of points starting with the point of said reference information set on said first image and ending with the point of a counterpart visualized in said second image is calculated; and at said display control step, the display of said calculated locus at said image display step is controlled.

13. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein: at said variation operation step, a change relative to said desired region-of-interest in said second image is calculated; and at said display control step, the display of the calculated change relative to said region-of-interest at said image display step is controlled.

14. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 13, further comprising a step for setting a region-of-interest by delineating a desired region-of-interest in said first image, wherein a change is calculated and displayed; the change is that relative to said region-of-interest delineated in said first image into a counterpart visualized in said second image.

15. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein said reference information set at said setting step is visualized in said first image to be located at the deepest point from the vicinity of said probe.

16. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein said reference information set at said setting step is automatically delineated in a predetermined portion of said first image.

17. (original) A method of displaying distortion information on a biological tissue together with an ultrasonic image according to Claim 11, wherein at said display control step, an image of said desired region-of-interest is displayed in a different display form, that is, in a different color or shape.

18. (previously presented) A diagnostic ultrasound system according to Claim 1, wherein said variation operation means further comprises:

a frame-data memorization means for memorizing a plurality of frame-data of reflected echo signals measured by said probe in time series;

an image-data production means for producing an image-data based upon said frame-data read-out from said memorization means; and

a feature point deriving means for deriving said feature points from at least two said image-data corresponding to each other;

wherein said variation operation means calculates the distance between at least said two feature points of said first image and the distance between at least said two feature points of said second image corresponding to said two feature points of said first image, and calculates an amount of change of the distance between said first image and said second image, based upon coordinate data of said feature points of two frame-data corresponding to said first image and said second image, derived by said feature point derive means.

-7-

19. (previously presented) A diagnostic ultrasound system according to Claim 18, wherein said feature point deriving means further comprises:

a first filtering means for selectively passing a spatial frequency of said frame-data read-out from said frame-data memorization means;

a power calculation means for calculating a distribution of power of the frame-data output from said first filtering means;

a weighting means for applying a weight to a distribution of power output from said power calculation means;

a clustering means for detecting two peak points in the distribution of power applied the weight output from said weighting means and retrieving the value associated with the peak points;

a correlation pre-processing means for processing a distribution of weight by fitting a predetermined weighting function to the peak points and the value output from said clustering means;

a second filtering means for selectively passing a spatial frequency of initial frame-data read-out from said frame-data memorization means;

a cross-correlation means for calculating a distribution of correlations between the distribution of weights output from said correlation pre-processing means and the distribution of power output from said second filtering means; and

a counterpart calculation means for detecting two peak points in the distribution of correlations output from said cross-correlation means and for retrieving the value associated with the peak points;

wherein said variation operation means calculates said amount of change of the distance by calculating a difference of the distance between the two peak points

obtained by said correlation pre-processing means and the two peak points obtained by said counterpart calculation means.

20. (previously presented) A diagnostic ultrasound system according to Claim 18, wherein said variation operation means further comprises:

a deformation arithmetic means for calculating the distance of two peak points and a positive or negative sign of moving direction;

a maximum deformation image storage means for identifying and storing an image in which the change of the distance of the two peak points and the positive or negative sign of moving direction are seen to have the greatest extent;

a minimum deformation image storage means for identifying and storing an image in which the distance of the two peak points and the positive or negative sign of moving direction are seen to have the smallest extent;

an initial image storage means for storing an image in which the distance of the two peak points and the positive or negative sign of moving direction are finally smallest;

a final image storage means for storing an image in which the distance of the two peak points and the positive or negative sign of moving direction are finally greatest; and

a distortion image operation means for visualizing the distortion of a biological tissue using the images stored in said final image storage means and said final image storage means.